LISTING OF CLAIMS:

1. (Currently Amended) A torque sensor comprising:

a first shaft and a second shaft connected coaxially;

a torsion bar converting a torque applied between said first shaft and said second shaft into a torsion displacement;

a multipolar magnet fixed to said first shaft or to one end of said torsion bar;

one set of magnetic yokes fixed to said second shaft or to the other end of said torsion bar and disposed in a magnetic field generated by said multipolar magnet;

one set of flux collecting rings disposed along an outer surface of said one set of magnetic yokes and opposed to each other via an air gap in an axial direction; and

a magnetic sensor for detecting the density of magnetic flux generated in said air gap,

wherein an outer cylindrical surface of said one set of flux collecting rings is surrounded by a magnetic shield, and

said magnetic shield has side portions covering side surfaces of said one set of flux collecting rings.

Claims 2 – 4 (canceled) 7 and 8 are cancelled.

5. (Previously presented) The torque sensor in accordance with claim 1, wherein said magnetic shield further covers a portion of the magnetic circuit thereof.

6. (Previously presented) The torque sensor in accordance with claim 1, further utilized in connection with a power steering apparatus.

Claims 7 – 8 (Canceled)

9. (Previously presented) The torque sensor in accordance with claim 1, wherein said magnetic sensor includes a plurality of sensors disposed in parallel to each other with respect to a direction of magnetic flux.

10. (Previously presented) The torque sensor in accordance with claim 1, wherein said magnetic sensor is disposed in said air gap.

11. (Previously presented) The torque sensor in accordance with claim 2, wherein said magnetic shield is integrated with said one set of flux collecting rings by resin molding.

12. (Previousl y presented) A torque sensor comprising:

a first shaft and a second shaft connected coaxially;

a torsion bar converting a torque applied between said first shaft and said second shaft into a torsion displacement;

a multipolar magnet fixed to said first shaft or to one end of said torsion bar;

one set of magnetic yokes fixed to said second shaft or to the other end of said torsion bar and disposed in a magnetic field generated by said multipolar magnet;

one set of flux collecting rings disposed along an outer surface of said one set of magnetic yokes and opposed to each other via an air gap in an axial direction;

a magnetic sensor for detecting the density of magnetic flux generated in said air gap; and

a magnetic shield, wherein an outer cylindrical surface of said one set of flux collecting rings is surrounded by said magnetic shield, and said magnetic shield is integrated with said one set of flux collecting rings by resin molding, and

wherein said magnetic shield at least one of (i) has side portions covering side surfaces of said one set of flux collecting rings, and (ii) directly covers the outer cylindrical surface of said one set of flux collecting rings.

13. (Previously presented) The torque sensor in accordance with claim 12, further utilized in connection with a power steering apparatus.

14. (Previously presented) The torque sensor in accordance with claim 12, wherein the magnetic shield includes a steel plate having a same width as a width of said set of flux collecting rings.

15. (Previously presented) The torque sensor in accordance with claim 12, wherein the magnetic shield defines an aperture therein, permitting removal of a flux collection portion of said set of flux collecting rings.

16. (Previously presented) The torque sensor in accordance with claim 12, wherein said magnetic sensor includes a plurality of sensors disposed in parallel to each other with respect to a direction of magnetic flux.

17. (Previously presented) The torque sensor in accordance with claim 12, wherein said magnetic sensor is disposed in said air gap.

18. (New) A torque sensor comprising:

a first shaft and a second shaft connected coaxially;

a torsion bar converting a torque applied between said first shaft and said second shaft into a torsion displacement;

a multipolar magnet fixed to said first shaft or to one end of said torsion bar;

one set of magnetic yokes fixed to said second shaft or to the other end of said torsion bar and disposed in a magnetic field generated by said multipolar magnet;

one set of flux collecting rings disposed along an outer surface of said one set of magnetic yokes and opposed to each other via an air gap in an axial direction; and

a magnetic sensor for detecting the density of magnetic flux generated in said air gap,

wherein an outer cylindrical surface of said one set of flux collecting rings is surrounded by a magnetic shield, and

said magnetic shield is integrated with said one set of flux collecting rings by resin molding.

19. (New) The torque sensor in accordance with claim 18, wherein said magnetic shield further covers a portion of a magnetic circuit thereof.

20. (New) The torque sensor in accordance with claim 18, further utilized in connection with a power steering apparatus.

21. (New) The torque sensor in accordance with claim 18, wherein said magnetic sensor includes a plurality of sensors disposed in parallel to each other with respect to a direction of said magnetic flux.

22. (New) The torque sensor in accordance with claim 18, wherein said magnetic sensor is disposed in said air gap.

23. (New) The torque sensor in accordance with claim 18, wherein said magnetic shield has side portions covering side surfaces of said one set of flux collecting rings and is integrated with said one set of flux collecting rings by resin molding.

24. (New) A torque sensor comprising:

a first shaft and a second shaft connected coaxially;

a torsion bar converting a torque applied between said first shaft and said second shaft into a torsion displacement;

a multipolar magnet fixed to said first shaft or to one end of said torsion bar;

one set of magnetic yokes fixed to said second shaft or to the other end of said torsion bar and disposed in a magnetic field generated by said multipolar magnet;

one set of flux collecting rings disposed along an outer surface of said one set of magnetic yokes and opposed to each other via an air gap in an axial direction; and

a magnetic sensor for detecting the density of magnetic flux generated in said air gap,

wherein an outer cylindrical surface of said one set of flux collecting rings is surrounded by a magnetic shield, and

said magnetic shield directly covers the outer cylindrical surface of said one set of flux collecting rings.

25. (New) The torque sensor in accordance with claim 24, wherein said magnetic shield further covers a portion of a magnetic circuit thereof.

26. (New) The torque sensor in accordance with claim 24, further utilized in connection with a power steering apparatus.

27. (New) The torque sensor in accordance with claim 24, wherein said magnetic sensor includes a plurality of sensors disposed in parallel to each other with respect to a direction of said magnetic flux.

28. (New) The torque sensor in accordance with claim 24, wherein said magnetic sensor is disposed in said air gap.

29. (New) The torque sensor in accordance with claim 24, wherein said magnetic shield has side portions covering side surfaces of said one set of flux collecting rings and is integrated with said one set of flux collecting rings by resin molding.

30. (New) A torque sensor comprising:

a first shaft and a second shaft connected coaxially;

a torsion bar converting a torque applied between said first shaft and said second shaft into a torsion displacement;

a multipolar magnet fixed to said first shaft or to one end of said torsion bar;

one set of magnetic yokes fixed to said second shaft or to the other end of said torsion bar and disposed in a magnetic field generated by said multipolar magnet;

one set of flux collecting rings disposed along an outer surface of said one set of magnetic yokes and opposed to each other via an air gap in an axial direction; and

a magnetic sensor for detecting the density of magnetic flux generated in said air gap,

wherein an outer cylindrical surface of said one set of flux collecting rings is surrounded by a magnetic shield, and

said magnetic shield includes a steel plate having a same width as a width of said one set of flux collecting rings.

31. (New) The torque sensor in accordance with claim 30, wherein said magnetic shield further covers a portion of a magnetic circuit thereof.

32. (New) The torque sensor in accordance with claim 30, further utilized in connection with a power steering apparatus.

33. (New) The torque sensor in accordance with claim 30, wherein said magnetic sensor includes a plurality of sensors disposed in parallel to each other with respect to a direction of said magnetic flux.

34. (New) The torque sensor in accordance with claim 30, wherein said magnetic sensor is disposed in said air gap.

35. (New) The torque sensor in accordance with claim 30, wherein said magnetic shield has side portions covering side surfaces of said one set of flux collecting rings and is integrated with said one set of flux collecting rings by resin molding.

36. (New) A torque sensor comprising:

a first shaft and a second shaft connected coaxially;

a torsion bar converting a torque applied between said first shaft and said second shaft into a torsion displacement; a multipolar magnet fixed to said first shaft or to one end of said torsion bar;

one set of magnetic yokes fixed to said second shaft or to the other end of said torsion bar and disposed in a magnetic field generated by said multipolar magnet;

one set of flux collecting rings disposed along an outer surface of said one set of magnetic yokes and opposed to each other via an air gap in an axial direction; and

a magnetic sensor for detecting the density of magnetic flux generated in said air gap,

wherein an outer cylindrical surface of said one set of flux collecting rings is surrounded by a magnetic shield, and

said magnetic shield defines an aperture therein, permitting removal of a flux collection portion of said one set of flux collecting rings.

37. (New) The torque sensor in accordance with claim 36, wherein said magnetic shield further covers a portion of a magnetic circuit thereof.

38. (New) The torque sensor in accordance with claim 36, further utilized in connection with a power steering apparatus.

39. (New) The torque sensor in accordance with claim 36, wherein said magnetic sensor includes a plurality of sensors disposed in parallel to each other with respect to a direction of said magnetic flux.

40. (New) The torque sensor in accordance with claim 36, wherein said magnetic sensor is disposed in said air gap.

41. (New) The torque sensor in accordance with claim 36, wherein said magnetic shield has side portions covering side surfaces of said one set of flux collecting rings and is integrated with said one set of flux collecting rings by resin molding.